ABSTRACT

A fluid treatment system in which the fluid to be treated is irradiated with ultraviolet light (UV). The system includes a sensor with capabilities for detecting multiple fluid treatment parameters, such as UV intensity level and fluid flow. The sensor contains a combination of a UV sensing means such as a photodiode, a flow sensing means such as a vibration sensitive microphone, and associated electronics for processing and transmitting data pertaining to the fluid treatment parameters. The system can also include or alternatively include an intelligent driver that powers a UV lamp and has the novel capabilities to receive, process, respond to, and display multiple fluid treatment parameter signals from one or more sensors without the need for additional signal processing and/or control devices. Specifically, in a preferred embodiment, the power being delivered to the UV lamp will be adjusted as warranted by the intelligent driver's analysis of at least one fluid treatment parameter, such as flow condition.